

USDA Foreign Agricultural Service

GAIN Report

Global Agricultural Information Network

THIS REPORT CONTAINS ASSESSMENTS OF COMMODITY AND TRADE ISSUES MADE BY
USDA STAFF AND NOT NECESSARILY STATEMENTS OF OFFICIAL U.S. GOVERNMENT
POLICY

Required Report - public distribution

Date: 7/15/2014

GAIN Report Number: ID1426

Indonesia

Agricultural Biotechnology Annual

2014

Approved By:

Thom Wright

Prepared By:

Titi Rahayu

Report Highlights:

This report updates the Indonesian 2013 Agricultural Biotechnology Annual Report. The Indonesian National Biosafety Commission for Genetically Engineered Products (BCGEP) was reactivated on June 2, 2014 through the Presidential Regulation No. 53/2014. Biosafety Commission members, however, have not yet been appointed. Their appointments are expected to be confirmed by August 2014. When the BCGEP is in place and working, there is hope that the biosafety assessment process for genetically engineered (GE) products will run smoothly.

Section I. Executive Summary:

The United States exported over \$1.3 billion of genetically engineered (GE) products to Indonesia in 2013, including Bt cotton, herbicide tolerant soybeans and meal, Bt corn and a variety of food products derived from GE crops.

At present, there are no imported or locally developed commercial GE seed varieties approved for planting in Indonesia. However, the Government of Indonesia (GOI) and local universities are extensively researching a number of GE varieties including virus resistance for tomatoes and potatoes, delayed ripening for papaya, sweet potato pest resistance, and drought tolerant rice. As well, some Indonesian researchers have begun to focus on GE animals for genotyping or genetic markers of Indonesian local livestock, such as poultry, Bali cattle and sheep. Any practical applications in Indonesia for GE animals and animal products are still very long-term.

The GOI's overarching policy on agricultural biotechnology is to "accept with a precautionary approach" with respect to environmental safety, food safety, and/or feed safety based on scientific approaches as well as taking into considerations of religion, ethical, socio-cultural, and esthetic norms. Therefore, several regulations and guidelines have been issued to protect the public from the possibility of negative consequences of biotechnology utilization.

To date, seven GE corn varieties, two GE soybean varieties, and three GE sugarcane varieties have received food safety approval in Indonesia. In addition, two GE corn varieties have received feed safety approval. Three GE sugarcane varieties have received environmental safety approval and variety-release approval from the Ministry of Agriculture. Once GE sugarcane varieties obtain feed safety approval, these products can be marketed. Post sources also report four more GE soybean varieties and three GE corn varieties are in the pipeline for food safety approval.

Environmental requirements for event approval may delay the importation or development of local commercial of GE seeds. Other unscientific considerations, such as religion, ethical, socio-cultural, and esthetic norms could slow down agricultural biotechnology acceptance.

Section II. Author Defined:

CHAPTER 1: PLANT BIOTECHNOLOGY

PART A: PRODUCTION

a) PRODUCT DEVELOPMENT:

Indonesia continues to develop GE crops, such as: rice (nitrogen use efficiency), sugarcane (modification of high glucose content), cassava (modification of amylase), tomato (resistant to virus), and delayed ripening papaya, albeit at a relatively modest pace. Below, Table 1 indicates the status of some GE crops development in biosafety containment test (BCT) and confined field trial (CFT)

Table 1. The status of GE crops development

Crops	Trait	Gene	Developer	BCF	CFT
Rice variety IR64	Beta carotene (GR2-R)	<i>psy</i>	The International Rice Research Institute (IRRI) and the Ministry of Agriculture.	-	v

Rice	Nitrogen use efficiency	<i>CsNitril-L</i>	ICABIOGRAD	v	
Rice	Drought tolerant	<i>OsER1</i>	ICABIOGRAD	v	
Rice	Productivity	<i>OsGS3; dep1</i>	ICABIOGRAD	v	
Rice	Salt tolerant	<i>OsErf1; OsDREB1A</i>	ICABIOGRAD	v	
Rice	Brown planthopper resistant		Padjadjaran University	v	
Sugarcane	High glucose content	SoSUT & SoSPSSoSPS1	PTPN-XI/Jember University	v	
Tomato	Viruses resistance (tomato yellow leaf curl virus and cucumber mosaic virus)	Coat protein	ICABIOGRAD/RIV	v	
Tomato	Low seed content (parthenocarpy)	<i>defH9-iaaM and defH9-RI-iaaM</i>	ICABIOGRAD	v	
Cassava	Low amylose content	<i>IRC-GBSS</i>	ICABIOGRAD/IIS	v	
Papaya	Delayed ripening	<i>Antisense ACC Oxidase</i>	ICABIOGRAD	v	
Potato	Resistance to Pytophthora infestans	<i>RB</i>	ICABIOGRAD	v	
Corn	Herbicide tolerant NK603		PT. Branita Sandhini		v
Corn	Insect resistant MIR 162		PT. Syngenta Seed Indonesia	v	
Tomato	Miraculin		University of Padjajaran	v	
Rice variety Rojolele	Yellow stem borer resistant	<i>Cry1Ab & cry18-cry1Aa</i>	The Indonesian Institute of Science	v	v
Rice	Drought tolerance	<i>oshox6</i>	The Indonesian Institute of Science	v	
Sugarcane	Availability of P	phytase	Bogor Agricultural University	v	
Rice	Aluminum tolerant	<i>MaMt2, MmSOD, PaCS</i>	Bogor Agricultural University	v	

Sugarcane	Drought tolerant	<i>P5CS</i>	Indonesian Biotechnology Research Institute for Estate Crops	v	

Source: FAS Jakarta from various sources (2014)

Post sources reported that the environmental safety and food safety assessment applications for GE late blight resistant potato will be submitted to the Ministry of Environment and the National Agency of Drug and Food Control (BPOM) in September 2014. This GE product was produced through the Ministry of Agriculture - Agricultural Biotechnology Support Project phase II (ABSPII)/USAID - University of Wisconsin project. It also reported that the confined field trial of Golden Rice (IR-64 variety) is planned for four locations. However, this is pending IRRI's decision to begin these trials.

b) **COMMERCIAL PRODUCTION:**

Indonesia has not commercially cultivated any GE crops, including GE seed production. However, Post sources report that as soon as the three GE sugarcane varieties receive feed safety approval from the Ministry of Agriculture, PT Perkebunan Nusantara XI (a state owned company) will cultivate and market them to sugar mills for food consumption.

c) **EXPORTS:**

Indonesia does not export any GE crops to the United States or any other country.

d) **IMPORTS:**

Tempeh and tofu, which are soybean-based food products, are staple foods in Indonesia. Indonesian soybean consumption is growing in correspondence with population and economic growth. Total soybean consumption last year reached 2.5 million metric tons (MMT), which is mostly fulfilled by imports. U.S. soybean takes about 92% market share in Indonesia.

As the world's 10th largest textile exporter, Indonesian cotton consumption reached 566 MMT last year. However, Brazil and Australia overtook the United States as the largest cotton suppliers to Indonesia.

The livestock feed industry determines the consumption of soybean meal and corn in Indonesia. Last year soybean meal consumption was around 3.5 MMT and corn consumption was 7.0 MMT. Indonesia imported around 3.6 MMT of soybean meal in 2013. Argentina, Brazil, Paraguay, India, and the United States are the primary suppliers. Corn imports reached 3.1 MMT, of which India held the largest market share. Other exporters include Brazil, Argentina, and the United States. Soybean meal and corn from India are not GE products.

Please see GAIN Reports [ID1405](#), [ID1407](#) and [ID1408](#) for more information regarding the trade of soybean, soybean meal, cotton, and corn.

e) **FOOD AID RECIPIENT COUNTRIES:**

At present Indonesia is not a receipt of USDA-funded food aid.

PART B: POLICY

a) REGULATORY FRAMEWORK:

The GOI's policy on biotechnology is "accept with a precautionary approach" with respect to environmental safety, food safety, and/or feed safety based on scientific approaches as well as taking into considerations of religion, ethical, socio-cultural, and esthetical norms. A few regulations and guidelines have been issued to protect the public from the possibility of negative consequences of biotechnology utilization. More details on Indonesia biotech legislation can be seen at [the Indonesian Biosafety Clearing House \(BCH\)'s website](#). An expected draft guideline for feed safety assessment has not yet been published. Sources report that the feed safety guidelines are currently undergoing final legal review in the Ministry of Agriculture's legal bureau.

The Ministers of Environment, Agriculture, Forestry, Marine Affairs and Fisheries, and the Head of BPOM are the authorities most responsible for approving and releasing GE products. The table 2 shows respective roles of national competent authorities.

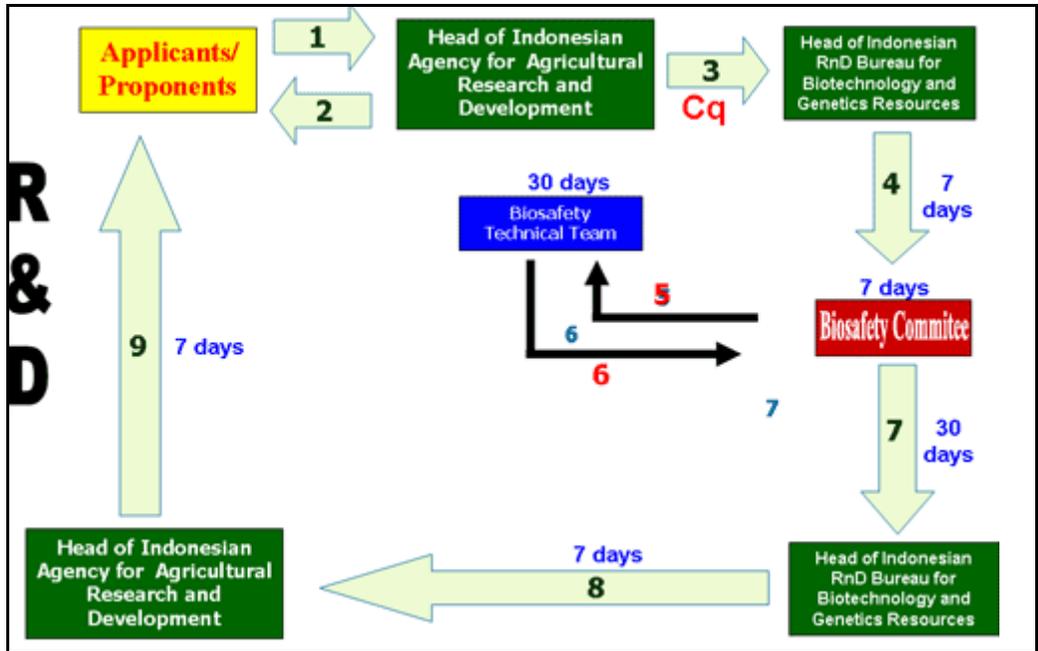
Table 2. The National Competent Authority for GE Products

No.	National Competent Authorities		Responsible for
	Ministry	Office	
1.	Ministry of Environment	Deputy for Biodiversity Conservation Enhancement and Environmental Destruction Control	Bio-safety
2.	Ministry of Agriculture		Feed safety
3.	Ministry of Agriculture	Center for Investment and License	Seed imports permit
4.	Ministry of Agriculture	National Seed Agency	Crop variety release
5.	Ministry of Agriculture	Indonesian Agency for Agriculture Research and Development	Research permit
6.	Ministry of Agriculture	Indonesian Agency for Agriculture Quarantine	Plant and animal imports
7.	National Agency of Drug and Food Control (BPOM)		Food safety
8.	Ministry of Marine Affairs and Fisheries	Research Center for Marine and Fisheries Product Processing and Biotechnology	Fisheries products and fish feed
9.	Ministry of Forestry		Forestry plants

Source: Indonesia Biosafety Clearing House (2010) and FAS (2012)

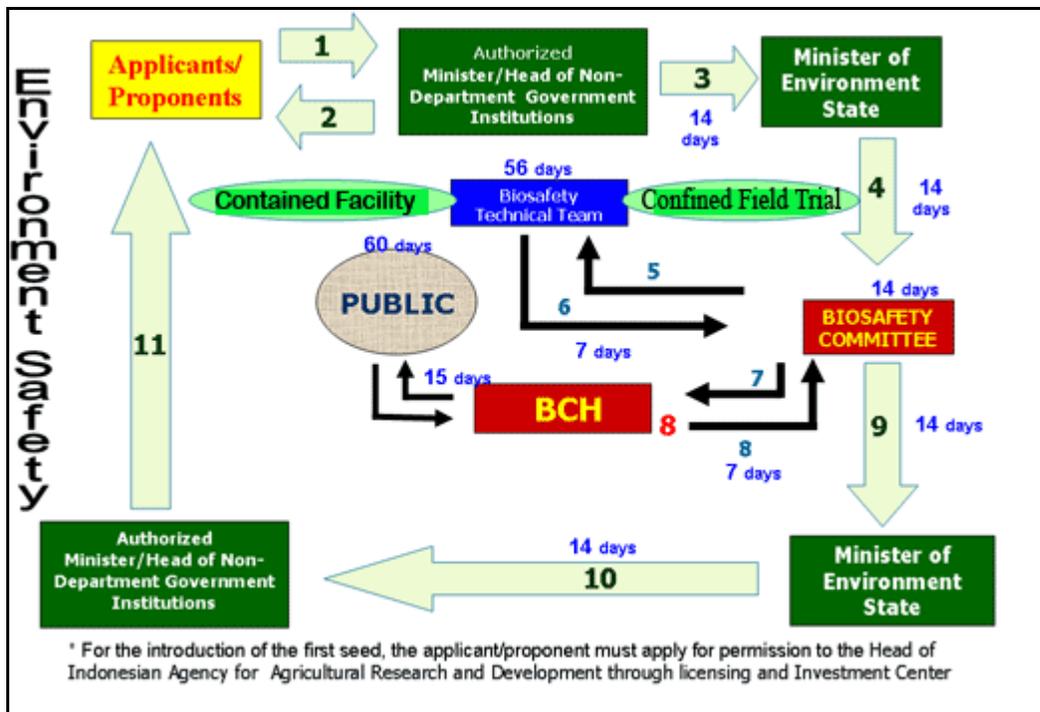
The procedures for the approval of food, feed, processing and environmental releases are described in the diagrams below, as per government regulation No. 21, 2005.

Figure 1. Procedure for Research and Development Based on Government Regulation No. 21/2005



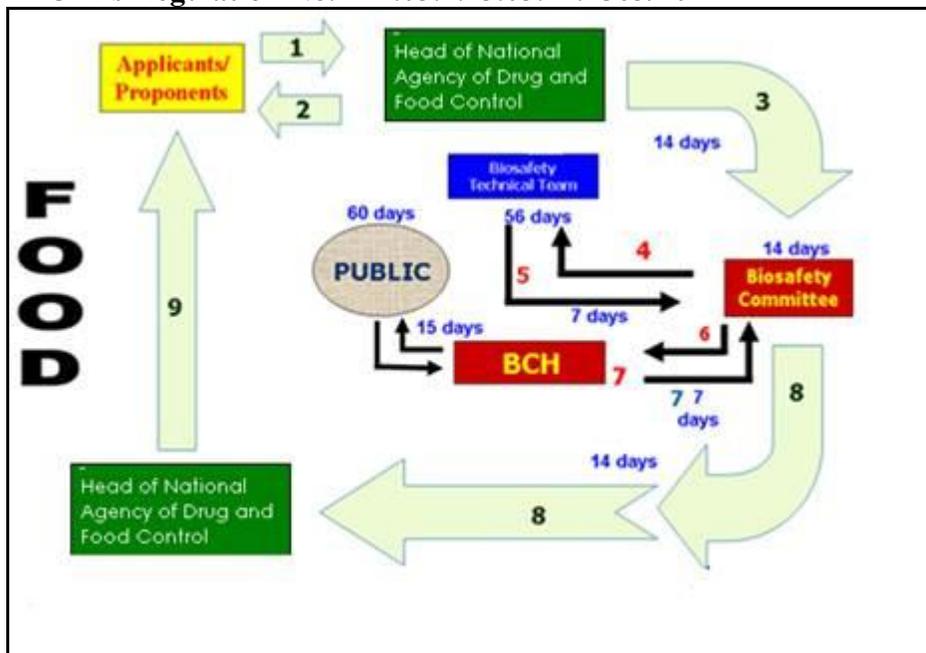
Source: Indonesia Bio-safety Clearing House (2010)

Figure 2. Procedure for Environment Safety Based on Regulation No. 21/2005



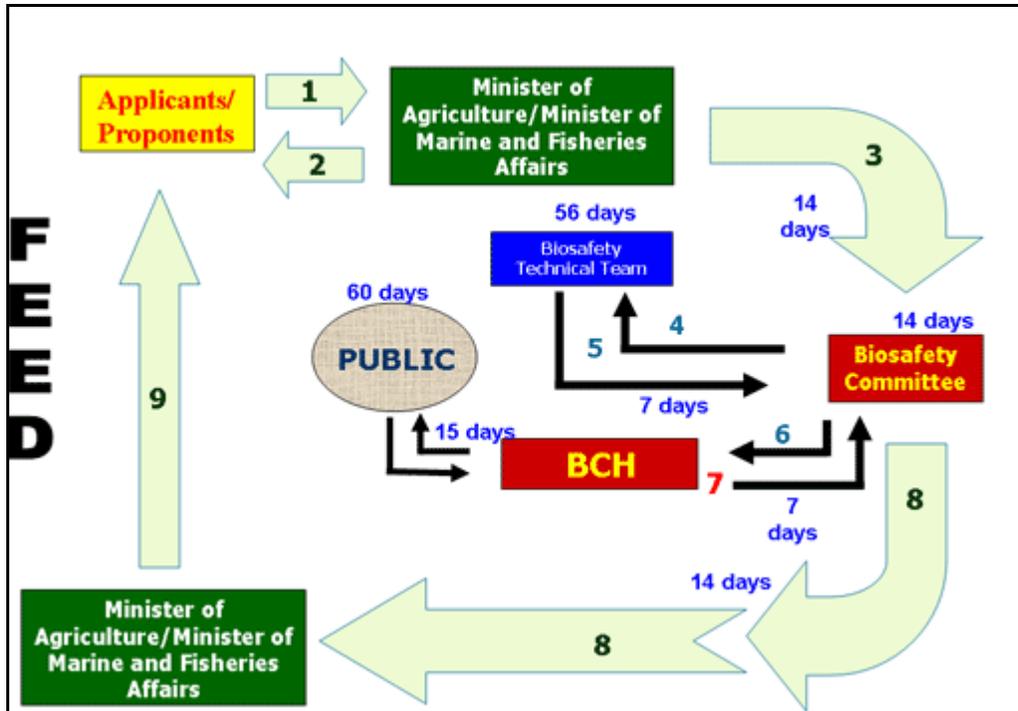
Source: Indonesia Bio-safety Clearing House (2010)

Figure 3. Procedure for Food Safety Based on Government Regulation No. 21/2005 and the BPOM's Regulation No. HK.03.1.23.03.12.1563/2012



Source: Indonesia Bio-safety Clearing House (2010) modified by FAS Jakarta (2012)

Figure 4. Procedure for Feed Safety Based on Government Regulation No. 21/2005



Source: Indonesia Bio-safety Clearing House (2010)

The National Biosafety Commission on Genetically Engineered Product (BCGEP) is responsible for providing biosafety recommendations, suggestions, and considerations of GE products to the authorized ministries. The BCGEP, which was established in 2010 based on Presidential Regulation No. 39/2010, had been inactive since June 15, 2013. On June 2, 2014 the Indonesian President Dr. Susilo Bambang Yudhoyono reauthorized the commission through [the Presidential Regulation No. 53](#). The reauthorization contained two significant changes. First, the commission is reduced from 21 to 19 members, which will include members of government, the community, and academia. Of the 19 seats, five are newly reserved for members the Indonesian community at large. Second, academic and community membership is limited to four years with the possibility of one reappointment for an additional term. Regulation 53 did not name the members of the Biosafety Commission. Another presidential decree will be issued naming the membership. The President is expected to sign the decree confirming biosafety committee nominees in August 2014.

Three Technical Teams for Biosafety (TTB) assist the BCGEP in conducting technical assessments and reviews for food, feed and environmental biosafety. The TTBs have not been active since November 2013, following inactivation of BCGEP. Once the new BCGEP's Chairman is appointed by the President, the TTB's work will restart. The technical team for environmental safety is divided into four groups: a plant group, an animal group, a fish group, and a microorganism group. In addition to this team, in 2012 BCGEP completed their organization by establishing the Team of Legal, Economic, Social, and Culture Assessment (TLESCA). This team consists of 5 additional members.

b) APPROVALS:

Several GE plants have received food, feed, and/or environmental safety certificates from the GOI.

However, due to incomplete biosafety assessments, no imported or locally developed GE plants have yet been commercialized. Please see the table below for the biosafety approved GE products.

Table 3. GE products that have been approved

For Food Safety		
No.	Product	Applicant
1.	Insect resistant corn event MON 89034	PT. Branita Sandhini
2.	Herbicide tolerant corn event NK 603	PT. Branita Sandhini
3.	Herbicide tolerant soybean event GTS 40-3-2	PT. Branita Sandhini
4.	Herbicide tolerant soybean event MON 89788	PT. Branita Sandhini
5.	Herbicide tolerant corn event GA21	PT. Syngenta Indonesia
6.	Insect resistant corn MIR 162	PT. Syngenta Indonesia
7.	Insect resistant corn BT 11	PT. Syngenta Indonesia
8.	Insect resistant corn MIR 604	PT. Syngenta Indonesia
9.	Corn event 3272	PT. Syngenta Indonesia
10.	Drought tolerant sugarcane event NXI-1T	PT. Perkebunan Nusantara XI
11.	Drought tolerant sugarcane event NXI-4T	PT. Perkebunan Nusantara XI
12.	Drought tolerant sugarcane event NXI-6T	PT. Perkebunan Nusantara XI
For Feed Safety		
1.	Herbicide tolerant corn event NK 603	PT. Branita Sandhini
2.	Insect resistant corn event MON 89034	PT. Branita Sandhini
For Environmental Safety		
1.	Drought tolerant sugarcane event NXI-1T	PT. Perkebunan Nusantara XI
2.	Drought tolerant sugarcane event NXI-4T	PT. Perkebunan Nusantara XI
3.	Drought tolerant sugarcane event NXI-6T	PT. Perkebunan Nusantara XI

Source: Biosafety Clearing House (2014)

GE soybeans events MON 87701, MON 87705, MON 87708, MON 87769, and GE corn events TC 1507, MON 87460, MON 87427 currently are waiting for food safety approval from BPOM.

c) **FIELD TESTING:**

Ministry of Agriculture regulation No. 61/2011 on the procedures for testing, evaluating, releasing, and withdrawing GE plant varieties speeds up the approval process, including aspects of the environmental safety approval process and field trials for GE crops. Under this regulation, limited field trials for the environmental safety assessment can be done in parallel with the adaptation trial for variety release. In addition, if GE crop comes from approved conventional hybrids, that product will not require multi-location field trials and will only require one location field trial from one planting period. Post sources report that the total field trial area for corn BT 11, corn GA21 is around 1.2 hectares. In addition, the total field trial area for GE corn NK603 is around 1 hectare in 4 locations. GE corn stacked event TC1507 x Mon810 x NK603 and stacked event combination TC1507 x NK603, MON810 x NK603, and TC1507 x NK603 are under field trials on about 4 hectares in 4 locations.

d) **STACKED EVENT APPROVALS:**

Environmental safety approval for stacked events is similar to single event approval. GE crops must undergo laboratory and biosafety containment tests, confined field trial, as well as environmental risk analysis. However, the GOI has not decided yet whether the regulations for food and feed safety approval process of stacked event will be the same as for a single event.

e) **ADDITIONAL REQUIREMENTS:**

Post is not aware on the additional requirements of GE seeds registration.

f) **COEXISTENCE:**

Indonesia has no national policy on co-existence.

g) **LABELING:**

To implement the government regulation issued in 1999 that requires labels and special logos to be on packaging of food containing GE ingredients, BPOM issued the regulation on food labeling controls for GE products in March 2012. According to this regulation, the packaged food that contains at least 5 percent of transgenic product must be labeled and stated “Food Containing Genetically Engineered Material” on the label. This 5 percent threshold level is based on the content percentage of Deoxyribo Nucleid Acid/DNA of GE product against the Deoxyribo Nucleid Acid of non GE product. Furthermore, the content percentage is calculated based on each GE product if food contains more than one GE product. This regulation can be also seen at GAIN Report [ID1217](#).

h) **TRADE BARRIERS:**

Environmental requirements for event approval may impede the importation or development of local commercial GE seeds. In addition, other unscientific considerations, such as: religion, ethical, socio-cultural, and esthetical norms could slow down the agriculture biotechnology acceptance. Post expects that Indonesia’s capacity to commercialize GE seeds once again will be pushed back until at least 2015.

Food registration procedures require a Genetically Modified Organism (GMO) or non-GMO statement for food containing potatoes, soybeans, corn, and their derivative products. This sometimes confuses BPOM officials when approving entry permits for these types of food. For example, BPOM regulations require that product derivatives which have undergone further refining processes to the point where the GE material cannot be identified (to include but not limited to oils, fats, sucrose, and starch) do not require any non-GMO statements. However, BPOM frequently requires additional GE testing when importers provide a GMO statement.

i) **INTELLECTUAL PROPERTY RIGHTS (IPR):**

Law No. 14/2001 on the Patent Act and Law No. 19/2009 on the Copyright Act address IPR. Law No. 29/2000 on the Plant Variety Protection regulates the intellectual property of new plants varieties. The Center of Plant Variety Protection and Agricultural License has responsibility to manage new plant variety registration.

j) **CARTAGENA PROTOCOL RATIFICATION:**

In 2004 Indonesia ratified the Cartagena Protocol through Government Regulation No. 21/2004 concerning Bio-safety to the Convention on Biological Diversity. As a Cartagena Protocol ratification country, Indonesia has:

- assigned the Ministry of Environment as the National Focal Point of Cartagena Protocol;
- appointed the Ministries to be the National Competent Authority of Cartagena Protocol;
- published Government Regulation No. 21/2005 concerning the Biosafety of Genetically Engineered Product;
- established the Biosafety Clearing House (BCH)

More details can be found at [the Indonesia BCH's website](#).

k) **INTERNATIONAL TREATIES/FORA:**

Indonesia is a member of the International Plant Protection Convention (IPPC) and the Codex Alimentarius (Codex). However, Indonesia hasn't taken any significant positions pertaining to biotechnology in these fora.

l) **RELATED ISSUES:**

Not applicable

m) **MONITORING AND TESTING:**

Although Government Regulation No. 21/2005 on Biosafety of Genetically Engineered Products also regulates monitoring systems for GE products, the guidelines for the monitoring mechanism are still in draft.

n) **LOW LEVEL PRESENCE POLICY (LLP):**

LLP is still a pending issue in Indonesia. The Ministry of Agriculture indicates that Indonesia would endorse the International Statement on LLP and fully support the initiative to develop approaches to manage LLP.

PART C: MARKETING

a) **MARKET ACCEPTANCE:**

Indonesian farmers are open to new using technologies including biotechnology. There is broad support for the technology from farmer organizations in Indonesia. Post expects that the technology will be rapidly adopted following commercialization.

Due to a lack of information and general knowledge about biotechnology, consumers are more hesitant if they know their food contains GE products. Nonetheless, Indonesians have widely consumed GE soybean derived tempeh and tofu for the last three decades.

b) **PUBLIC/PRIVATE OPINIONS:**

Several Indonesian non-governmental organizations (NGOs) occasionally oppose the production and use of GE plants, although actually their intended targets are usually the multi-national companies (MNC) behind the technology.

Modeled on the success of the Biotechnology Coalition of the Philippines, a pro-biotech advocacy association, the Society of Indonesian Agricultural Biotechnology (previously named the Indonesian Coalition on Agricultural Biotechnology (ICAB)) was formed in Lombok, West Nusa Tenggara on July 4, 2012 during the 5th Indonesia Biotechnology Conference for supporting the adoption of agriculture biotechnology in Indonesia. More information regarding ICAB can be seen at GAIN Report [ID1226](#). In addition, the Indonesian farmer association KTNA indicated their strong support

for planting GE crops, as they believe the technology can greatly improve their family's livelihood.

c) **MARKETING STUDIES:**

There are no recent studies on marketing of GE plant and their products. However in 2006 there was a survey to determine the Indonesian public's willingness to accept GE products. The survey targeted students at a well-known agricultural university in Indonesia. The research showed that the students lack knowledge of GE foods, although they had a class in biology. The study also found that students: (1) are somewhat willing to consume GE food if these GE products reduce the amount of pesticides applied to crops, (2) are very willing to consume GE food if the food were more nutritious than non-GE food, (3) will avoid consuming GE food if the food posed a risk of causing allergic reactions for some people, (4) consider ethical and religious concerns as very important to purchasing decisions, (5) had mixed reactions on the importance of price when making the decision to purchase GE food, (6) feel labeling of GE food should be mandatory even though it will affect the price, and (7) think that existing governmental regulations on food safety remain poor.

PART D: CAPACITY BUILDING AND OUTREACH

a) **ACTIVITIES:**

Following is the list of the activities for capacity building and outreach on biotechnology through Cochran Fellowship Program, USDA biotech fund, FAS' Emerging Markets Program, State Department, etc. over the past two years.

Cochran Fellowships Program

- Michigan State University – Biosafety Program 2012

Sponsored by USDA

- Workshop on Agricultural Biotechnology, June 9 – 13, 2014 in Bogor, Indonesia (jointly organized by the International Service for the Acquisition of Agri-Biotech Application (ISAAA), Michigan State University, and Southeast Asia for Food, Science and Technology (SEAFST) Center).
- 12th APEC High Level Policy Dialogue, June 27, 2013 in Medan, Indonesia.
- Workshop on Regulatory Issues on Emerging Market, June 25 – 26, 2013 in Medan, Indonesia (jointly funded and organized by the International Service for the Acquisition of Agri-Biotech Application (ISAAA), APEC Secretariat, and Program for Biosafety System (PBS)).
- Communication Workshop on Agricultural Biotechnology, May 16, 2013 (jointly organized by the International Food Information Council (IFIC) and Indonesian Biotechnology Information Center (IndoBIC)).
- Media Workshop on Communicating Food Science, May 15, 2013 (jointly organized by the International Food Information Council (IFIC) and Indonesian Biotechnology Information Center (IndoBIC)).

Sponsored by FAS Jakarta (through EMP, TIRF and CSS funding)

- Agricultural Biotechnology Short Course for the Technical Team for Biosafety of Transgenic Product at the Michigan State University, East Lansing, MI, September 9 – 21, 2012 (jointly funded by Crop Life Asia).
- Experts Dialogue in Biotechnology: Transgenic Crops versus Food Security Challenges, Bogor, July 10, 2012 (jointly funded by Crop Life Indonesia, MNC, IndoBiC/ISAAA, and Bogor

Agricultural University).

- Providing U.S. domestic travel for one Government of Indonesia (GOI) official to attend the Farm Progress Show in Boone, Iowa, August 27 – 31, 2012 (the program is organized by CropLife Indonesia).

Funded under USAID through PBS

- International Training Course: “Developing and regulating Ag. Biotech Products: sharing expertise from Australia and South East Asia”, organized by PBS/IFPRI, OGTR Australia, and Crawford Foundation, in Canberra, June 10 – 13, 2014.
- Forum Group Discussion on Environmental Safety Assessment, March 11, 2014.
- Forum Group Discussion on Food Safety of Stacked Gene Transgenic Products, March 10, 2014.
- Workshop on “Basic Biotechnology for High School Biology Teacher, Yogyakarta, July, 3 – 5, 2013.
- University Outreach in the University of North Sumatera, Medan, Indonesia, June 24, 2013.
- Workshop on “Socio-Economic and Legal Aspect of GMO Assessment”, Jakarta, February 18 – 19, 2013.
- Workshop on “Process Management Mapping for Stakeholders”, Jakarta and Bogor, February 4 – 8, 2013.
- Universities Outreach in the University of Gadjah Mada, Yogyakarta, December 6 – 9, 2012.
- Seminar on “Gate into Biotech Crops”, Yogyakarta, October 4, 2012.
- University Outreach in the Bogor Agricultural University, Bogor, September 29, 2012.
- University Outreach in the University of Jember, Jember, September 27, 2012.
- Comparative Study to the Philippines for Indonesia Quarantine Officer, Manila, July 10 – 14, 2012.
- Workshop on “Feed Safety”, Bogor, June 19 – 20, 2012.
- Workshop on “Environmental Risk Analysis”, Bandung, March 6 – 8, 2012.
- Workshop on “Liability & Redress on Genetically Engineered Products”, Jakarta, February 21, 2012.

Funded under Biotech Outreach Fund, Bureau of Economic, Energy, and Business Affairs (EEB), U.S. Department of State

- Biotechnology Conference, Surabaya, October 10 – 13, 2013 (jointly organized by University of National Development (UPN Veteran) East Java and Consulate General Surabaya).
- Seminar on the Role of New Technology in Strengthening Indonesian Food Security, Jakarta, September 11, 2012 (jointly organized by FAS Jakarta and Winrock International).
- Biotech Regulators Summit, Jakarta, August 8, 2012 (jointly organized by FAS Jakarta and Office of Economic Section, Department of State).
- Biotech Outreach Activities by sponsoring Dr. Roger Beachy to various meetings and workshops in Bogor, Jakarta, Malang, Yogyakarta, and Denpasar, from July 9 – 14, 2012 (jointly organized by FAS Jakarta, Economic Section of Department of State and Winrock Indonesia) .
- Workshop on Potential for Farm Income and Business Growth o Java: An Agricultural Technology Assessment”, Bogor, May 1, 2012 (organized by Winrock Indonesia).
- Roundtable Discussion on Identifying Farmers Needs on New Agricultural Technology, Jakarta, April 10, 2012 (organized by Winrock Indonesia).
- Biotech Speaker Series by sponsoring Dr. Roger Beachy, founding president of the Donald Danforth Plant Science Center to Jakarta Food Security Summit, and Roundtable Discussion ,

from February 6 – 9, 2012 (jointly organized by FAS Jakarta, Winrock Indonesia, and Indonesian Chambers of Commerce & Industry)

b) **STRATEGIES AND NEEDS:**

Indonesia has significant capacity to promulgate but limited capability to enforce regulations with respect to biosafety of GE products. Reportedly, Indonesia has specific needs in raising the capacity of this country to apply transparent and science-based regulations to plant biotechnology, such as: knowledge improvement of technical team through biosafety training on stacked event of GE products, finalizing the guideline for research and development of transgenic products in the laboratory, biosafety containment, and confined field, as well as developing food safety and feed safety assessment guidelines for stacked event, and monitoring program.

Although the GOI has admitted that biotechnology is one of tools in increasing Indonesia's capacity for food, but it hasn't been confident enough to adopt the technology. Therefore, Post will continue to actively support the activities on advocating the positive roles of agriculture biotechnology in supporting food security in Indonesia and increasing farmers income.

CHAPTER 2: ANIMAL BIOTECHNOLOGY

PART E: PRODUCTION AND TRADE

a) **PRODUCT DEVELOPMENT:**

Some research institutions and universities have reportedly conducted studies on molecular marker, such as: research on local genetic cow, bull, and chicken using gen markers, identification of animal characteristics to heat tolerance and feeding utilization, and GE chicken (resistant to New Castle disease) using simple breeding method.

b) **COMMERCIAL PRODUCTION:**

There is no commercial production of GE animals in Indonesia.

c) **EXPORTS:**

Not applicable

d) **IMPORTS:**

Not applicable

PART F: POLICY

a) **REGULATION:**

Although the GOI have several regulations to legalize animal biotechnology, however there are no clear guidelines to assess and approve it.

b) **LABELING:**

Not applicable

c) **TRADE BARRIERS:**

Not applicable

d) INTELLECTUAL PROPERTY RIGHTS (IPR):
Not applicable

e) INTERNATIONAL TREATIES/FORA:
Not applicable

PART G: MARKETING

a) MARKET ACCEPTANCE:
Not applicable

b) PUBLIC/PRIVATE OPINIONS:
Not applicable

c) MARKET STUDIES:
Not applicable

PART H: CAPACITY BUILDING AND OUTREACH

a) ACTIVITIES:
Not applicable

b) STRATEGIES AND NEEDS:
Not applicable